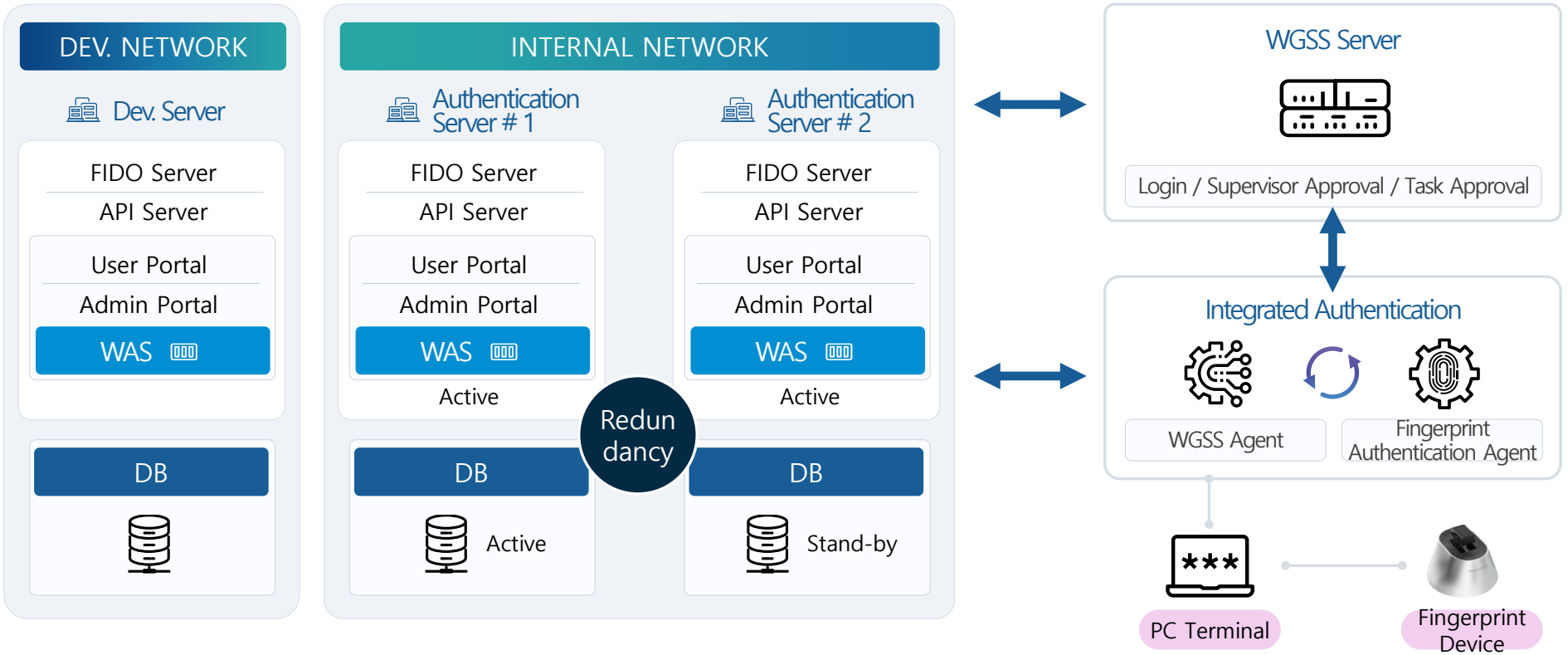
05. System Architecture

To strengthen internal controls across all overseas branches, we will enhance the WGSS system access control with the implementation of a biometric (fingerprint) authentication system. This system will prevent unauthorized terminal manipulation and password theft by external entities.



06. Key Features and Benefits

- Fingerprint Security Key: proprietary fingerprint sensor, FIDO2-certified, overheating resistance, Financial Services references
- Cradle: CE and RoHS2 global compliance, designed for reliability and stability, Financial Services references

Fingerprint Security Key

	OCTATCO	TrustKey	Notes
Model Name	EzFinger 2+	B210H	-
FIDO2 Certification	○	△	All our models are certified
FIDO Alliance Membership	○	X	-
Fingerprint Sensor	OCTATCO	Overseas Import	-
Overheating Resistance	○	X	Improved chip configuration
FS References	○	X	Jeonbuk Bank, SBI Bank. KTCU

OCTATCO EzFinger 2+

Cradle

	OCTATCO	TrustKey	Notes
CE	○	△	Mandatory for overseas delivery
ROHS2	○	△	Mandatory for overseas delivery
Main Material	Metal	Plastic	-
Weight	280g	4g	Weighted cradle for stable and reliable fingerprint recognition
FS References	○	X	Jeonbuk Bank, SBI Bank. KTCU

TrustKey B210H

06. Key Features and Benefits

OCTATCO MFA can fully support Woori Bank's Zero Trust security framework by enhancing its internal controls. We hold references from domestic financial institutions, offer branch-specific management capabilities, and leverage the technical expertise of our skilled in-house team.

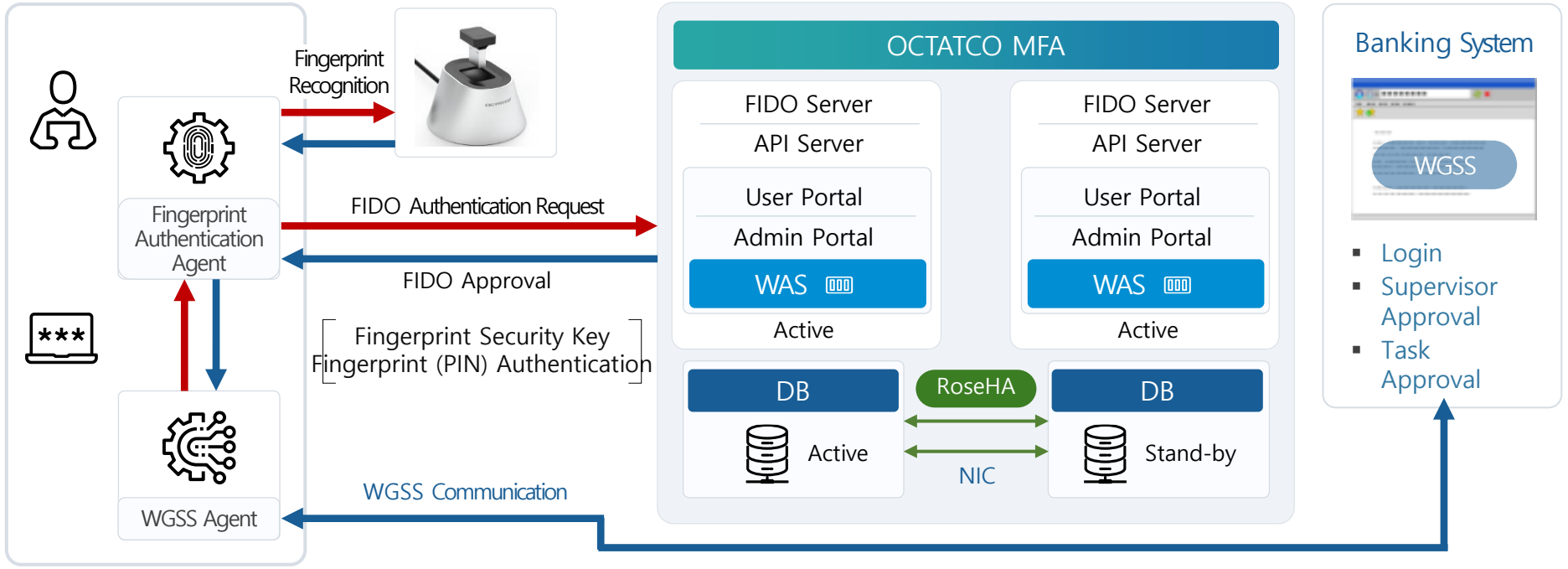
Benefits of OCTATCO MFA

Related References	▪ Successfully implemented OCTATCO MFA for internal control purposes at various financial institutions ▪ E.g. 2FA for SBI's Banking System
Useful Functions	▪ Branch-specific management functionalities ▪ Policy configuration, research, and reporting capabilities
Strong Workforce	▪ 100% of experienced in-house employees ▪ 20% of global professionals

Ⅲ. Technical Specifications

a. Application Architecture

Fingerprint Authentication System Architecture (WGSS) for overseas branches



User's Client PC

- WGSS Agent
  Performs ID/PW authentication
  Requests fingerprint authentication
- Fingerprint Authentication Agent
  Performs fingerprint authentication
  Sends FIDO request and receives approval

Fingerprint Authentication Security Key

- Local authentication with fingerprint
  ** Biometric information is stored locally on the security key*

OCTATCO MFA

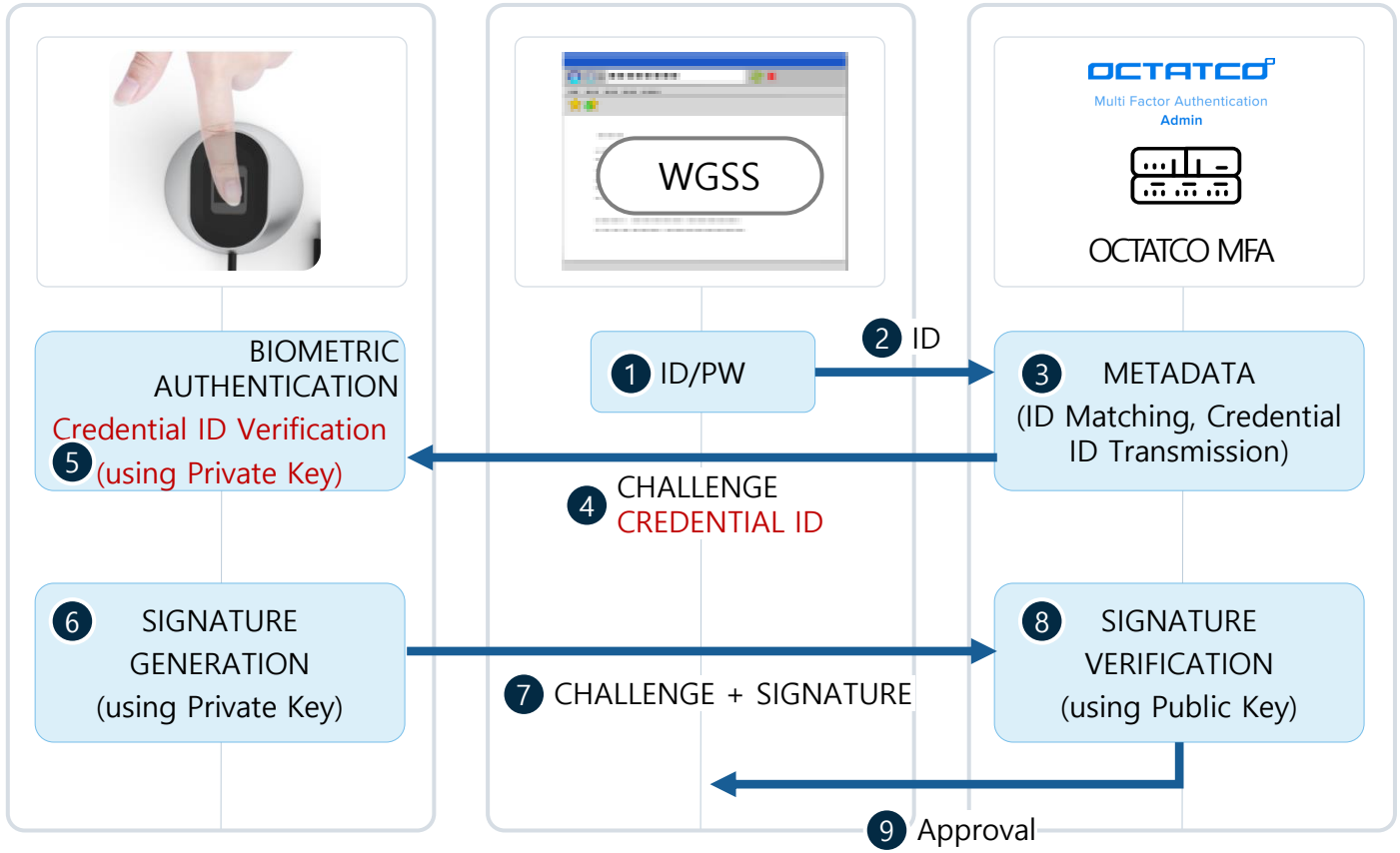
- Dual FIDO authentication servers
- Dual databases

Woori Banking System

- Integration of Fingerprint Security Key and FIDO Server
- Integration of Banking System Login and WGSS Agent (C/S API)

b. Data Architecture

FIDO Fingerprint Authentication Data Flow



FIDO Authentication Process	
1	ID / PW Authentication
2	ID Transmission
3	ID Matching
4	Challenge Value and Credential ID Transmission
5	Fingerprint (PIN) Authentication and Credential Verification
6	Signing (Private Key Encryption)
7	Challenge Value and Signature Transmission
8	Signature Verification (Public Key Decryption)
9	Approval

c. S/W Configuration and Specifications

Selecting the optimal FIDO Authentication Server Software and FIDO Fingerprint Security Keys for a scalable solution with future user growth in mind

FIDO Fingerprint Security Key Specifications

	FIDO Fingerprint Scanner
MCU & F/W	Arm® Cortex®-M23 TrustZone® Technology ARM C/C binary
Fingerprint Algorithm	PB (Precise Biometrics)
FIDO Certifications	4 certifications
Fingerprint Sensor	Capacitive Fingerprint Recognition Sensor

FIDO Authentication Server Specifications

Recommended	Required Minimum Specifications
CPU 4core	OLTP for 450 simultaneous users: 113,032 tpmC
HDD 236GB	20KB * 8 times/day * 2000 users * 22 days/month * 3 years
RAM 32GB	OCTATCO Test Server 16GB

FIDO Authentication Server S/W Configuration

OS	Redhat Enterprise 8.10
Database	Maria DB 10.6.18
WAS	Nginx 1.24.0
JDK	JDK 17.0.11
DB Redundancy S/W	RoseHA

FIDO Authentication Server H/W Configuration

	FIDO Authentication Server (DB included)	Development Authentication Server (DB included)
CPU	8 Core CPU	8Core CPU
RAM	64GB	32GB
HDD	960GB*4EA	480GB *4EA
NIC	1G 2P Fiber*2EA, 1G UTP *1EA	1G 2P Fiber*2EA, 1G UTP *1EA